HP-23: The modulation of the intestinal microbiota and its anti-obesity effects: a systematic review and meta-analysis of clinical trials

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Subject description: The prevalence of obesity has taken an upward trend in the last decades, the World Health Organization has declared a pandemic and its projections indicate that by 2035 more than 39% of the world population will be affected. However, in the fight against obesity there is no one cure because obesity is a multifactorial disease and as such it needs a multifactorial approach. Recent breakthroughs in the field of microbiota research have uncovered a correlation between the composition of the intestinal microbiota and obesity and opened a new avenue for treatment.

Objectives: Our objective is to evaluate the knowledge concerning the impact of probiotics, prebiotics, and synbiotics on the modulation of the intestinal microbiota and its anti-obesity effects.

Methods: A systematic search was undertaken using science direct, Google Scholar databases, PubMed and Scopus by limiting the publication period from 2017 to 2023 (with emphasis on the most recent papers). The following combinations of keywords were used: “obesity”, “Probiotics”, “Prebiotics” “Symbiotics”, with “gut microbiome, microbiota, the study was carried out on 21 articles, of witch 8 were randomized clinical trials and 13 meta-analyses.

Results and Discussion: In all the articles reviewed, probiotics had a significant effect on reducing body weight, body mass index (BMI) compared to the control group, however the effects were both strain-specific and dose-related or dose-dependent, as for the doses used, they were higher than 109 and 1010 CFU/ml per day. Further, probiotics express their greatest potential when they are used in the form of symbiotics by combining probiotics and prebiotics, the results may indicate that symbiotics effect on body weight is superior to both probiotics and prebiotics groups and control groups

Conclusion: Probiotics, prebiotics and symbiotics can be effective as anti-obesity agents However, their effectiveness depends on the type used, their quantity and the duration of the treatment.

Keywords: Microbiota, Obesity, Prebiotics, Probiotics, Symbiotics